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IMAGES IN INTERVENTION

Modified T-Technique With Bioresorbable Scaffolds Ensures Complete Carina Coverage

An Optical Coherence Tomography Study

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A 43-year-old patient undergoes a transradial percutaneous coronary intervention for a bifurcation lesion of the left proximal circumflex artery and the first obtuse marginal branch (Medina 1,1,1) (Fig. 1). A 3.5 × 12-mm bioresorbable vascular scaffold (BVS) (Abbott Vascular, Santa Clara, California) is positioned in the obtuse marginal branch (OM) with a 3.0-mm (noninflated) balloon parked in

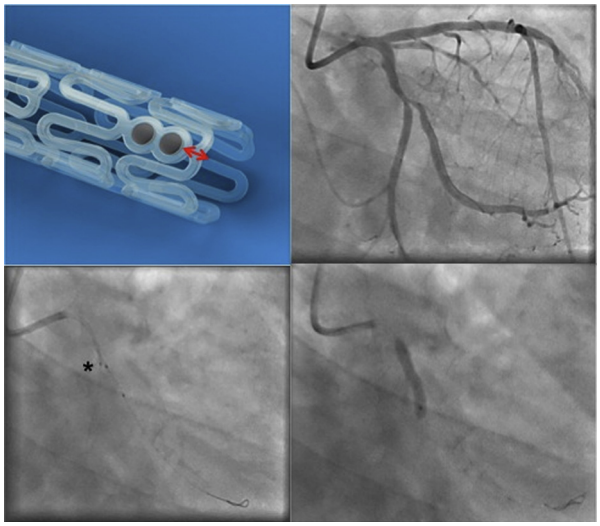

FIGURE 1 Bioresorbable Scaffold and Procedure Angiograms

(Top left) Proximal scaffold edge relative to the radiopaque marker beads of a 3.5-mm bioresorbable vascular scaffold (BVS). **(Top right)** Baseline right anterior oblique/caudal angiogram displaying the bifurcation of the proximal left circumflex artery and obtuse marginal branch (OM). **(Bottom left)** Positioning of the 3.5 × 12-mm BVS in the OM with the noninflated "bumper balloon" **(*)** in the main branch. **(Bottom right)** Deployment of the 3.5 × 18-mm BVS in the main branch.

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FIGURE 2 Final Angiogram and Corresponding Optical Coherence Tomography

The final angiogram after treatment of the bifurcation with 2 bioresorbable vascular scaffolds (BVSs) **(middle panel)**. The optical coherence tomography (OCT) illustrations **(a–d)** correspond with the marked segments **(a–d)** on the angiogram. CX = circumflex artery; OM = obtuse marginal branch. **(*)** Shadow of the platinum marker bead.

the main branch as a bumper to help mark the carina of the bifurcation. Of note, the proximal scaffold ring of a 3.5-mm BVS protrudes 1.4 mm and 1 mm from the edge of the proximal radiopaque platinum marker beads in its crimped and deployed constellation, respectively. The proximal marker is set at the lower shoulder of the carina. This ensures enough protrusion into the main branch to allow for complete coverage of the carina including its proximal shoulder yet avoiding excessive protrusion that would convert the technique into a mini-crush implicating 3 layers of scaffold.

A 3.5 × 18-mm BVS is implanted in the main branch across the bifurcation. The OM is rewired, and sequential postdilation is performed. An optical coherence tomography study from the OM confirmed complete coverage of the carina, appropriate scaffold apposition, and preserved BVS integrity (Fig. 2). Specific features of the BVS can help execute a modified T and protrusion technique with complete carina coverage, precluding more aggressive crush maneuvers and obviating the need for final kissing-balloon inflation.

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